

CLAIMS

What is claimed is:

1. 1. An intramedullary nail for insertion into a cavity formed in a fractured bone, comprising:
 2. a proximal portion of the nail having (i) a first end, (ii) a second end opposite the first end, (iii) a cylindrically shaped, tubular body extending between the first and the second ends and having a curved longitudinal axis, and (iv) an end plate disposed at the first end of the proximal portion of the nail and attached to the cylindrically shaped, tubular body;
 5. a distal portion of the nail; and
 7. a cylindrically shaped, tubular shaft portion of the nail extending between the second end of the proximal portion of the nail and the distal portion of the nail.
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1. 2. The intramedullary nail according to claim 1, wherein an aperture formed by an inner periphery of the cylindrically shaped, tubular body is closed by the end plate.
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1. 3. The intramedullary nail according to claim 1, wherein:
 2. the end plate includes a first screw hole;
 3. the cylindrically shaped, tubular body includes a corresponding second screw hole;
 4. and
 5. the first and the second screw holes are aligned so as to direct a locking screw inserted in the first screw hole through the second screw hole and into a fragment of the

7 fractured bone.

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1 4. The intramedullary nail according to claim 1, wherein the end plate includes a first
2 screw hole, the cylindrically shaped, tubular body includes a corresponding second screw
3 hole, and further comprising;

4 a locking screw extending from the first screw hole, through the second screw hole,
5 and into a fragment of the fractured bone.

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1 5. The intramedullary nail according to claim 4, wherein:

2 the fractured bone is a femur;

3 the bone fragment is a portion of the femur having at least one of a greater
4 trochanter and a lesser trochanter; and

5 the locking screw extends into one of the greater trochanter and the lesser
6 trochanter.

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1 6. The intramedullary nail according to claim 4, wherein the locking screw has a
2 hollow core with threads formed on the outer periphery of the hollow core, and further
3 comprising:

4 a solid cylindrical screw insert disposed within the hollow core and engaging the
5 threads.

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1 7. The intramedullary nail according to claim 1, wherein:

2 the end plate includes a screw hole configured to engage a locking screw and direct
3 the locking screw into a fragment of the fractured bone; and
4 with the intramedullary nail fully inserted into the fractured bone cavity, the screw
5 hole in the end plate is visible to the naked eye of the surgeon.

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1 8. The intramedullary nail according to claim 7, wherein with the intramedullary nail
2 fully inserted into the fractured bone cavity, the screw hole in the end plate is configured
3 such that the locking screw can be engaged with the screw hole and directed into the
4 fragment of the fractured bone, without a jig.

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1 9. The intramedullary nail according to claim 1, wherein:

2 the cylindrically shaped, tubular body has a first diameter near the first end of the
3 proximal portion of the nail and a second diameter, smaller than the first diameter, near the
4 second end of the proximal portion of the nail.

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1 10. The intramedullary nail according to claim 1, wherein:

2 the cylindrically shaped, tubular body has a first diameter near the first end of the
3 proximal portion of the nail; and

4 the cylindrically shaped, tubular shaft portion has a second diameter, smaller than
5 the first diameter.

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1 11. The intramedullary nail according to claim 1, wherein the proximal portion of the

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2 nail is attachable to and removable from the cylindrically shaped, tubular shaft portion of
3 the nail.

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1 12. The intramedullary nail according to claim 11, wherein
2 the cylindrically shaped, tubular body includes a first threaded portion near the
3 second end of the proximal portion of the nail;

4 the cylindrically shaped, tubular shaft portion includes a second threaded portion;
5 and

6 the proximal portion of the nail is attached to the cylindrically shaped, tubular shaft
7 portion of the nail by engagement of the first and second threaded portions.

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1 13. The intramedullary nail according to claim 1, wherein:
2 the longitudinal axis of the cylindrically shaped, tubular body of the proximal portion
3 of the nail is curved in a first plane and in a second plane which intersects the first plane.

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1 14. The intramedullary nail according to claim 13, wherein:
2 the cylindrically shaped, tubular shaft portion of the nail has a longitudinal axis;
3 the longitudinal axis of the cylindrically shaped, tubular body of the proximal portion
4 of the nail is curved in the first plane at an angle in a range of 20° to 25° from the
5 longitudinal axis of the cylindrically shaped, tubular shaft portion of the nail; and
6 the longitudinal axis of the cylindrically shaped, tubular body of the proximal portion
7 of the nail is curved in the second plane at an angle in a range of 5° to 7° from the

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8 longitudinal axis of the cylindrically shaped, tubular shaft portion of the nail.

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1 15. The intramedullary nail according to claim 1, wherein:

2 the distal portion of the nail has a cylindrically shaped, tubular body of a first

3 diameter, extending from the cylindrically shaped, tubular shaft portion of the nail; and

4 the cylindrically shaped, tubular shaft portion of the nail has a second diameter,

5 smaller than the first diameter.

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1 16. The intramedullary nail according to claim 15, wherein the cylindrically shaped,

2 tubular body of the distal portion of the nail includes a first screw hole and a corresponding

3 second screw hole, and further comprising:

4 a locking screw extending from the first screw hole, through the second screw hole,

5 and into a fragment of the fractured bone, the locking screw having a head portion and a

6 shaft portion, with the shaft portion having a diameter of no less than 7 mm.

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1 17. The intramedullary nail according to claim 16, wherein the locking screw has a

2 hollow core with threads formed on the outer periphery of the hollow core, and further

3 comprising:

4 a solid screw insert disposed within the hollow core and engaging the threads.

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1 18. The intramedullary nail according to claim 15, wherein the cylindrically shaped,

2 tubular body includes a screw hole configured to engage a locking screw and direct the

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- 3 locking screw into a fragment of the fractured bone; and
- 4 with the intramedullary nail fully inserted into the fractured bone cavity, the screw
- 5 hole is configured such that the locking screw can be engaged with the screw hole and
- 6 directed into a fragment of the fractured bone, without a jig.

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